Health Consultation

RUST-OLEUM CORPORATION EVANSTON FACILITY

EVANSTON, COOK COUNTY, ILLINOIS

CERCLIS NO. ILD094748571

NOVEMBER 26, 1999

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR TOLL FREE at
1-888-42ATSDR
or
Visit our Home Page at: http://atsdr1.atsdr.cdc.gov:8080/

HEALTH CONSULTATION

RUST-OLEUM CORPORATION EVANSTON FACILITY

EVANSTON, COOK COUNTY, ILLINOIS

CERCLIS NO. ILD094748571

Prepared by:

Illinois Department of Public Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

BACKGROUND AND STATEMENT OF ISSUES

The Illinois Environmental Protection Agency (Illinois EPA) requested the Illinois Department of Public Health (IDPH) review the historical and environmental data available to determine if a public health threat exists at the former Rustoleum Corporation (RC) site in Evanston, Illinois. RC was subject to the Resource, Conservation, and Recovery Act of 1976 (RCRA) because it was considered a full quantity generator and a transporter of hazardous waste. RC had a RCRA-regulated drum storage pad, which was used for storage of hazardous waste, in the northeastern portion of the site. RC is currently a redeveloped brownfield property.

RC was initially placed on the Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS) in October 1993 for site discovery. This discovery action was taken because of past use of the property as an RC manufacturing facility for paints, coatings, and resins, and before that, as an Evanston dump. Illinois EPA conducted an integrated site assessment at RC for the U.S. Environmental Protection Agency (USEPA). The sampling portion of the assessment was completed on April 15 and 16, 1997 [1].

The former RC property is on about 20 acres of land at 2301 Oakton in Evanston, Cook County, Illinois (Attachment1). The site is bordered by Oakton Avenue to the south, Hartrey Avenue to the east, the Chicago and Northwestern railroad tracks to the west, and a few small commercial and industrial shops to the north. The area has both residential and commercial-industrial land uses.

Before RC's use of the property, the eastern portion was used as a clay pit to obtain clay to make bricks. Records show that a brickyard operated on the site from around 1905 until 1940, during which a pit was formed measuring approximately 40 feet in depth and 600 feet by 1,000 feet in size. This pit extended off the RC property to the northeast. The city of Evanston used the pit as an area to dispose of non-combustible refuse. When RC conducted site investigations in this area before sale of the property, they found slag, cinders, and other non-combustible fill materials.

RC operated on the site from around 1940 to 1990. The facility occupied mainly the western portion of the property and manufactured paints, coatings, and alkyd resins. During operation, RC had one main building and several smaller buildings occupying primarily the western half of the site. Shipping, receiving, warehousing, and manufacturing operations were conducted in the main building, while the smaller buildings were used for maintenance, resins manufacturing, and a boiler room. Other areas on the site included a hazardous waste drum storage area, a metal test racks area, and a parking lot (Attachment 2). In addition, a quarter acre in the northwest corner of the property was leased to a scrap metal recuperation firm, and a 2-acre area on the eastern portion was leased to an automobile junkyard operator.

In 1990, to prepare for the sale of the property, RC removed several underground storage tanks (USTs), conducted a RCRA closure for the drum storage area, and removed contaminated soils (Attachment 3). Before selling the property, RC demolished all of their buildings during the

summer and fall of 1990. Following this, Home Depot purchased the property and constructed a home improvement center. Currently, a Home Depot home improvement center, a pet shop, and an asphalt parking lot entirely cover the property.

Environmental site assessments and remedial activities conducted in 1989, 1990, and 1991 were as follows [1]:

1990 Tank Removal. In December 1989, RC authorized the removal of seven USTs from the west side of the facility. Table 1 provides a summary of the USTs, the Rustoleum designation, compartment capacity, total tank capacity, and contents. This action took place in January 1990 and included removal of tanks, removal of residual liquids in the tanks, and cleaning, transporting, and disposing of the tanks. Following the removal of the tanks, some soil sampling was conducted at the bottom of the excavation pits. The sampling showed the presence of xylene, toluene, ethylbenzene, and polynuclear aromatic hydrocarbons (PAHs). These soils were not remediated at the time because a more thorough site investigation was recommended.

1990 Environmental Assessment. Following removal of the seven USTs, a thorough environmental assessment of the property was done during January and February 1990. This included collection and analysis of 26 soil boring samples, 16 surface soil samples, 9 groundwater samples, and 5 sediment samples taken inside the buildings in drains and sumps. The document reviewed said this sampling suggested that groundwater and certain areas of the soils have been affected by site activities. The results were not available for review when this health consultation was written.

1991 Soil Remediation. Remediation performed in January and February 1991 consisted of excavation and off-site disposal of 965 cubic yards of contaminated soil from the northeast, northwest, and west portions of the property. The excavated areas had visual contamination or had headspace (soil gas) readings greater than 60 parts per million (ppm) by volume when screened with a photoionization detector. Following the excavation, soil samples were collected to determine whether further soil removal was warranted. Results were not available for review when this health consultation was written.

1991 Tank Removal. In February 1991, another UST was discovered [2]. This 12,000-gallon steel tank was thought to have been used for heating oil storage and was found filled with sand. The tank was excavated and disposed on September 4, 1991.

1991 RCRA Closure. The drum storage pad in the northeastern portion of the site measured 170 feet long by 60 feet wide and was used for hazardous waste storage from 1976. The storage pad went through RCRA closure and was verified closed on August 20, 1991.

The city of Evanston and the other cities near the former RC property use surface water from Lake Michigan for their municipal water supplies. The city of Evanston Public Works said that they were not aware of any private or industrial groundwater use in the Evanston area. Illinois

EPA records do not show the presence of any drinking water wells within a 4-mile radius of the site.

Surface water runoff from the site flows into storm sewers. The North Shore Channel flows south and is about 0.25 miles west of the site. Hydrogeological studies show that groundwater flow is east, in the opposite direction, so any contaminated groundwater from the site would be unlikely to enter the channel. Lake Michigan, which is used as a major recreational area and fishery, is approximately 2 miles east of the site.

The estimated population living within a 4-mile radius of the site is:

Distance from the site	½-mile radius	1-mile radius	2-mile radius	4-mile radius
Population	4,791	26,411	157,327	541,218

Attachment 4 depicts the population information. On February 5, 1997, Illinois EPA conducted the initial CERCLA Integrated Site Assessment visit of RC (Attachment 5). A Home Depot home improvement center and its parking lot almost entirely covered the property. Two open areas, one grassy and one with assorted construction debris and weeds, existed within the parking lot. The open grassy area was south of the Home Depot building along the Oakton Avenue, and the other area was southeast of the Home Depot building. A narrow grassy strip with landscape trees and shrubs surrounded the parking lot. On April 15 and 16, 1997, the sampling team collected on-site groundwater samples. Illinois EPA concluded that a removal action was not warranted.

On August 7, 1998, IDPH visited the RC site (Attachment 6). A new building housing a Pet Shop was added east of the Home Depot building. A pile of dirt and two heavy trucks were on the property between the Pet Shop and Hartrey Avenue. The parking lot was entirely covered with asphalt. A ditch separated from the property by a wire fence was along the western border where the railroad used to be.

DISCUSSION

To determine whether past site activities had affected the groundwater, on April 15-16, 1997, Illinois EPA collected five on-site groundwater samples, including a duplicate at one location. A sixth groundwater sample location was attempted in front of the Home Depot building along Oakton Avenue, but no groundwater was obtained with the Geoprobe. A Total Vapor Analyzer (TVA) was used to detect any air contamination in the boreholes. Sample descriptions are presented in Table 2. A diagram of the sample locations is shown in Attachment 7. No on-site soil samples were collected because several areas of surficial and subsurface contaminated soils were excavated previously and removed from the property. Currently the site is entirely covered with Home Depot, a Pet Shop, and asphalt. No soil samples were collected from the surrounding residential properties.

Groundwater samples G1-G5 were collected using a Geoprobe soil boring unit to probe into the ground to the depth of groundwater. Groundwater was found at depths ranging from 4 to 12 feet below the ground surface. Sample G5 was a background sample collected on the far west boundary of the property, upgradient of the site. Groundwater collected from locations G3 and G4 had a very strong chemical odor and elevated TVA readings.

The Quality Assurance/Quality Control (QA/QC) summary was obtained from Illinois EPA. It states that field data and sampling quality during the assessment were satisfactory. No analytical problems were noted in the QA/QC summary except that benzene concentration in the background sample G5 is an estimated value and may be semi-quantitative.

IDPH compared the level of each contaminant with appropriate comparison values to select contaminants of interest that may pose a threat to public health if someone is exposed to them. Contaminants in groundwater were compared with USEPA drinking water regulations [3]. Chemicals exceeding comparison values and those for which no comparison value was available were selected for further evaluation for both non-cancerous and cancerous health effects. The selected contaminants, their concentrations in on-site and background samples, and comparison values, are shown in Table 3. A detailed discussion of each comparison value used is found in Attachment 8.

Concentrations of contaminants above comparison values were detected in all on-site and background samples. Benzene was detected in samples G3, G4, and G5, with the highest level in the background sample G5 [4]. This suggests that the source of the benzene is not the RC site. Potential sources for benzene includes the property west of RC where a scrapyard is currently located and the northeastern area of the site where an automobile junkyard used to operate. An oil-stained area where the grass was killed apparently by oil and gasoline coming from the scrapyard was noted about 20 feet north of G5.

Elevated levels of 4,4'-DDD was in the background sample, but not in any of the other samples. The source for 4,4'-DDD, a chemical used to kill insects and is presently banned, might be from past off-site activities [5].

Elevated levels of metals were found in most of the samples, with a peak in G3 for aluminum, arsenic, barium, iron, and lead, and in G4 for copper and zinc. Past activities on the site and in the vicinity are the likely source of the contamination. Lead was widely used in manufacturing of paints in the past.

Of the contaminants detected above the comparison levels, only benzene, 4,4'-DDD and lead were present at levels that might cause harmful health effects if people are exposed to them. At the present time and most likely in the future, no exposure pathways are expected to link groundwater contaminants to a receptor population. The samples were obtained from a perched aquifer on top of the relatively impermeable layer of clay that extended about 80 feet in depth, so the contaminants are confined to that aquifer and is unlikely to migrate downgradient. The same

is true for lead, which is not likely to migrate and contaminate drinking water. Moreover, no private or industrial groundwater use is in the area. No drinking water wells exist within a 4-mile radius of the site.

CONCLUSIONS

Based on the information reviewed, IDPH concludes that the former RC site poses no apparent public health hazard at the present time. Benzene, 4,4'-DDD, and lead were detected at elevated levels in on-site groundwater samples, but no one comes into contact with this water. The contaminants are contained in a confined aquifer, and neither private nor industrial groundwater use exists within a 4-mile radius of the site.

In the past, activities at the former RC may have been a source of contamination, but available data do not document past exposures. Those activities were interrupted, buildings demolished, USTs disposed, contaminated soil removed, and the entire ground covered with asphalt and new buildings, so the source of contamination no longer exists.

RECOMMENDATIONS

IDPH recommends no public health actions at this time because no human exposure to contaminated groundwater is occurring or is likely to occur in the future that may be of public health concern. If site conditions change, the site may need to be re-evaluated.

PREPARER OF REPORT

Constanta E Mosoiu
Environmental Toxicologist
Illinois Department of Public Health

REFERENCES

1. Illinois EPA: Rustoleum, Evanston, Il. "CERCLA Integrated Site Assessment". (Site Visit and Sampling March-April 1997)

2. Environmental Resources Management-North Central, Inc.: "Underground Storage Tank Removal Report, Rustoleum Corporation Former Facility, Evanston, Il". November 11, 1991.

3. USEPA: "Drinking Water Regulations and Health Advisories". Washington D.C.: Office of Water 4304. EPA 822B-96-002. October 1996.

4. ATSDR: "Toxicological Profile for Benzene". (Update). U.S. Department of Health and Human Services. September 1997.

5. Agency for Toxic Substances and Disease Registry (ATSDR): "Toxicological Profile for 4,4'-DDT, 4,4'-DDE, 4,4'-DDD". (Update). U.S. Department of Health and Human Services. May 1994.

CERTIFICATION

This Former Rustoleum Health Consultation was prepared by the Illinois Department of Health under Cooperative Agreement with the Agency for Toxic Substances and Disease Registry. It is in accordance with approved methodology and procedures existing at the time the Health Consultation was initiated.

Technical Project Officer
SPS, SSAB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this Health Consultation and concurs with its findings.

Chief, SPS, SSAB, DHAC, ATSDR

Table 1. Description of Underground Storage Tanks Removed in January 1990

Tank Compartment Designation	Compartment Capacity (Gallons)	Total Capacity (Gallons)	Tank Content
104	12,000	12,000	Mineral Spirits
105	10,000	10,000	Xylene
106A	2,000	6,000	Butanol
106B	2,000	6,000	Aliphatic Solvent Blend
106C	2,000	6,000	Empty
107	10,000	10,000	Toluene
108A	3,330	10,000	Gasoline
108B	3,330	10,000	Methyl Isobuthyl Ketone (MIBK)
108C	3,330	10,000	Propylene Glycol Ether
109A	7,000	14,000	Mineral Spirits
109B	7,000	14,000	Xylol
110A	7,000	14,000	Methyl Ethyl Ketone Peroxide (MEK)
110B	7,000	14,000	VM&P Naphtha (Refined Solvent Naphtha)

Table 2. Description of Groundwater Samples Collected April 15/16 1997

Sample ID	Date Collected	Groundwater Depth	Screening Depth	Sample Location	Comments
G1, G2	April 15	10 feet	12- 14 feet	210 feet S, 80 feet E of SE corner of the Home Depot Building	PID-no elevation FID-1,200
G3	April 15	12 feet	14- 16 feet	80 feet N, 45 feet W of the northeast corner of the Home Depot building	Strong chemical odor PID-no elevation FID-525
G4	April 16	6 feet	12- 14 feet	98 feet N, 45 feet E of the southeast corner of the Home Depot building	Strong chemical odor PID-no elevation FID-10,000
G5	April 15	4 feet	4- 6 feet	60 feet W, 30 feet N of the southwest corner of garden center at Home Depot building	PID-no elevation FID-215

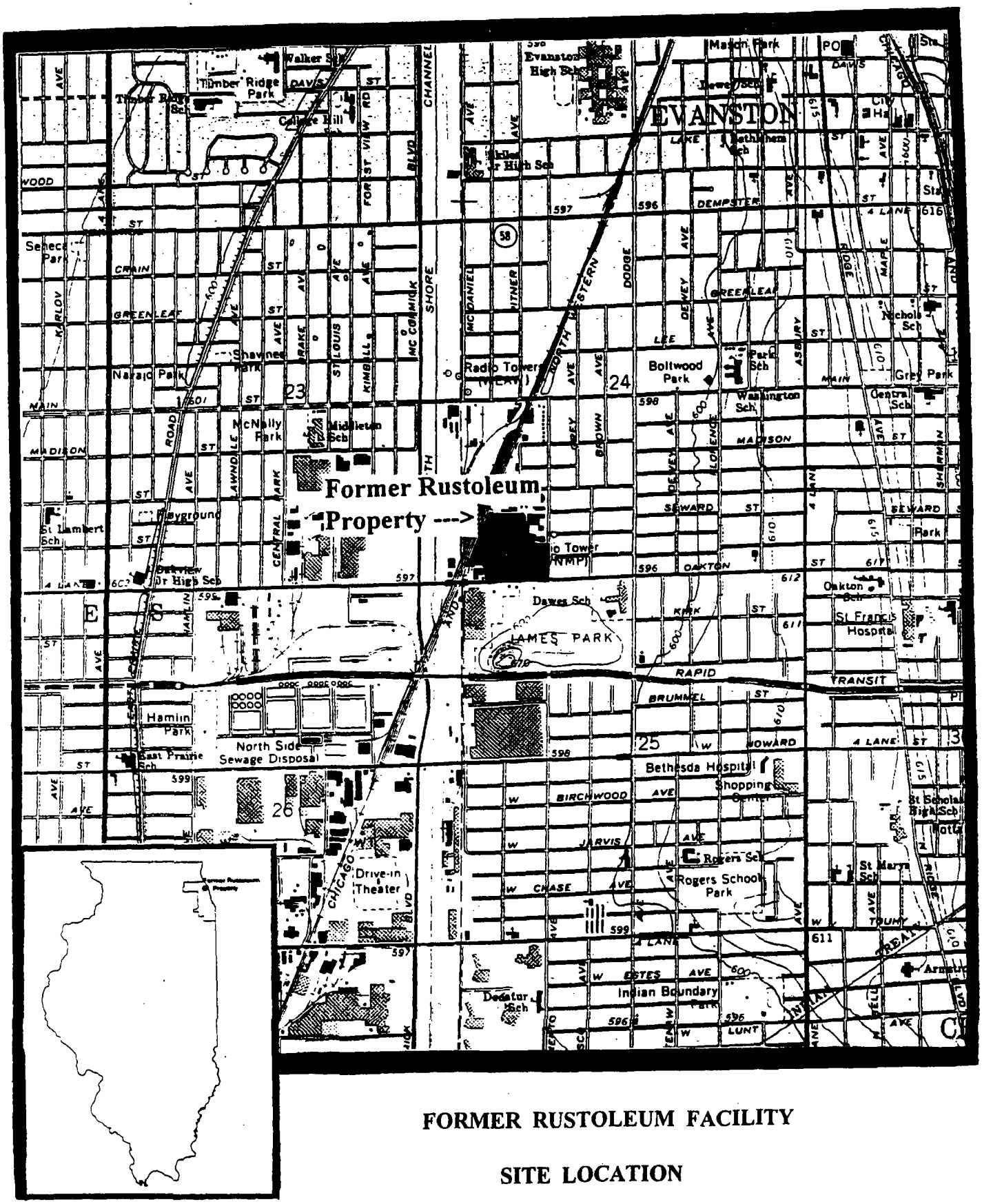
PID = Photo ionization detection readings (in meter units) taken with the Total Vapor Analyzer in the borehole
FID = Flame ionization detection readings (in meter units) taken with the Total Vapor Analyzer in the borehole

Table 3. Groundwater Contaminants Exceeding Comparison Values.

Contaminants µg/L*	On-site				Background	Comparison Value (µg/L) and Source
	G1	G2	G3	G4	G5	
Benzene	ND	ND	15	10	150J	1 (CREG)[1] 5 (MCL)[2]
4,4'-DDD	ND	ND	ND	ND	0.23	0.1 (CREG)[1]
Aluminum	1,960	361	11,700	7,280	1,530	50-200 (SMCL)[2]
Arsenic	46.8	28.3	53.8	26.5	43.8	3 (EMEG)[1] 50 (MCL)[2]
Barium	436	329	1,580	1,100	307	700 (RMEG)[1] 2000 (MCL)[2]
Copper	30.8	9.6 B	188	192	44.4	100 (SMCL)[2]
Iron	6,460	2,100	48,000	26,500	11,700	300 (SMCL)[2]
Lead	644	244	866	613	80.8	0 (at tap; MCL)[2]
Manganese	121	81.6	431	481	673	50 (RMEG)[1] 50 (SMCL)[2]
Zinc	198	66.7	857	1,370	156	500 (MCL)[2]

*µg/L = micrograms of contaminant per liter of water = parts per billion (ppb)
ND = The compound was analyzed for, but not detected
J = Indicates an estimated value
B = Value is real but is above instrument detection limit and below contract required detection limit
[1] Drinking Water Comparison Values (Expires 9/30/98)
CREG = Cancer Risk Evaluation Guide
EMEG = Environmental Media Evaluation Guide (ATSDR)
RMEG = Reference Dose Media Evaluation Guide (ATSDR)
[2] US Environmental Protection Agency: "Drinking Water Regulations and Health Advisory". October 1996
MCL = Maximum Contaminant Level (EPA)
SMCL = Secondary Maximum Contaminant Level (EPA)

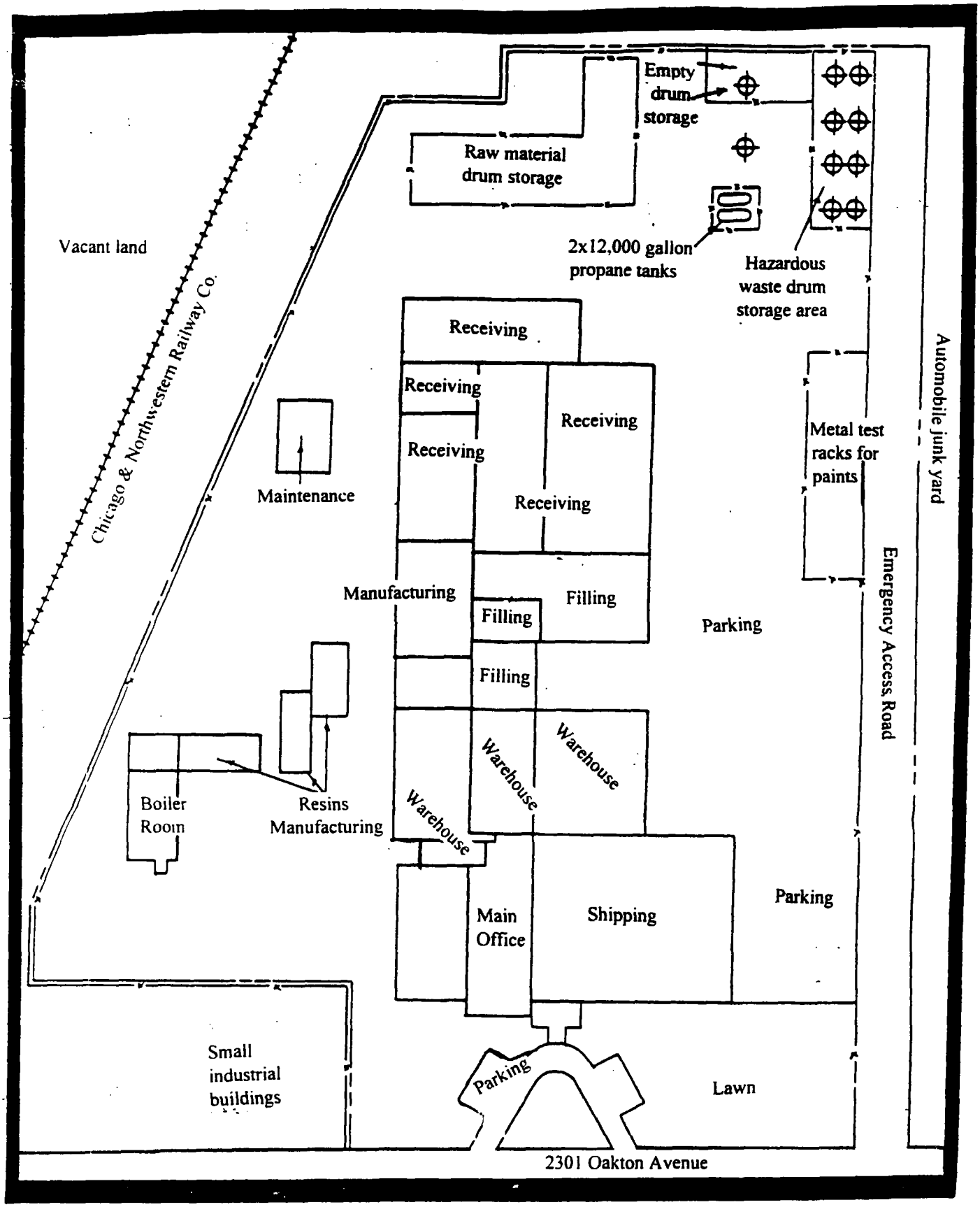
ATTACHMENT 1



FORMER RUSTOLEUM FACILITY

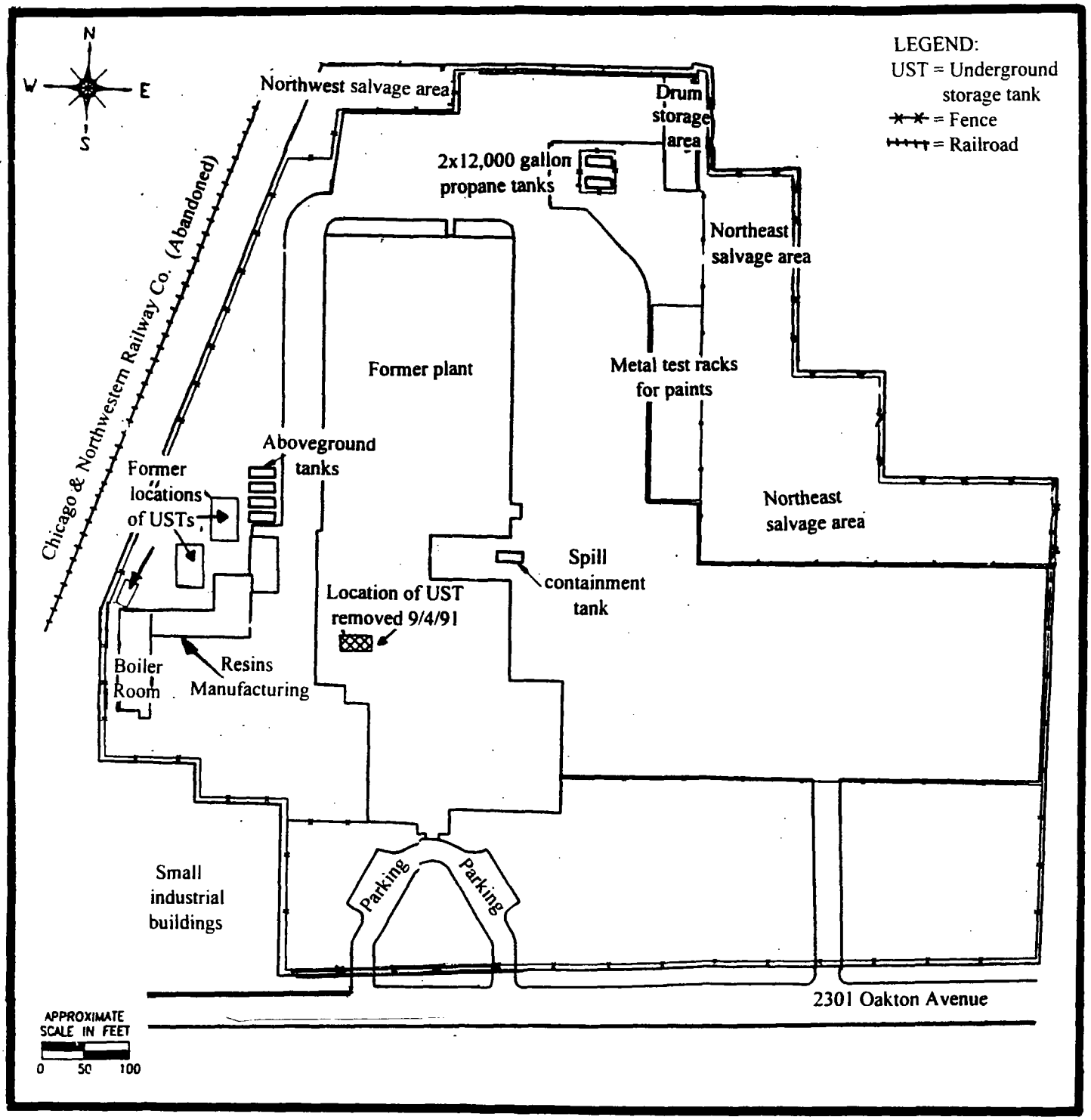
SITE LOCATION

ATTACHMENT 2



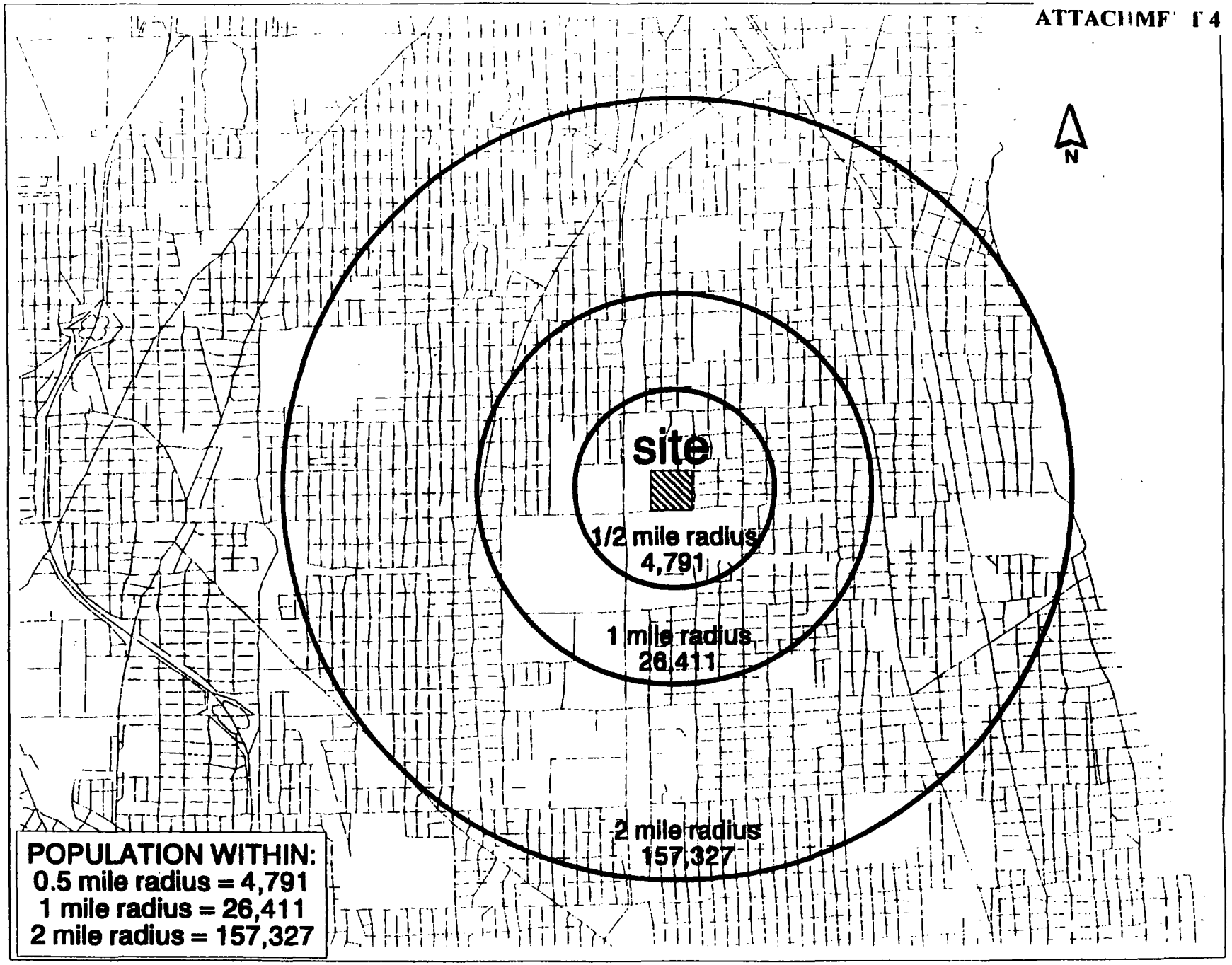
FORMER RUSTOLEUM FACILITY DIAGRAM

ATTACHMENT 3



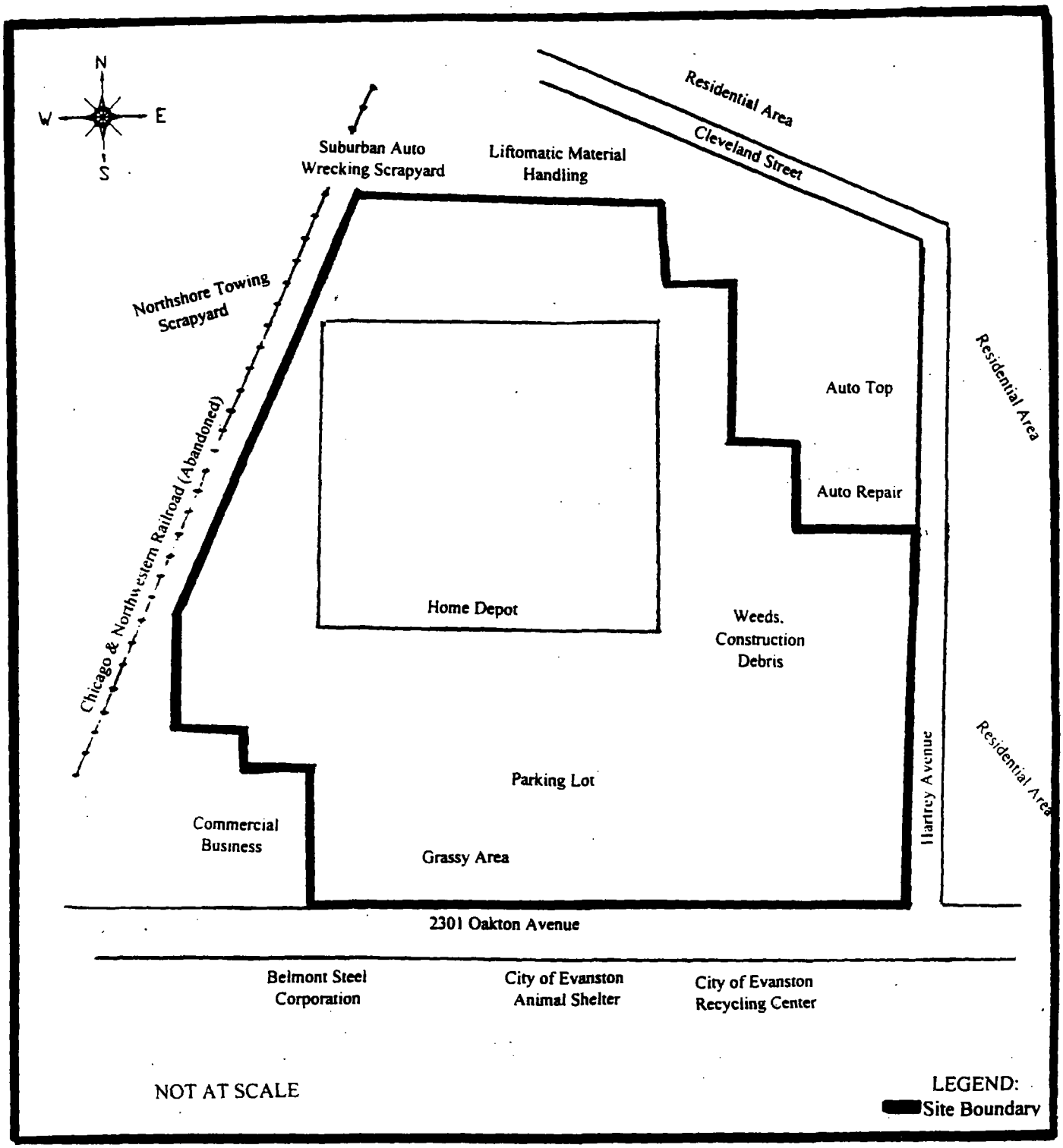
RUSTOLEUM FACILITY

LOCATIONS OF UNDERGROUND STORAGE TANKS



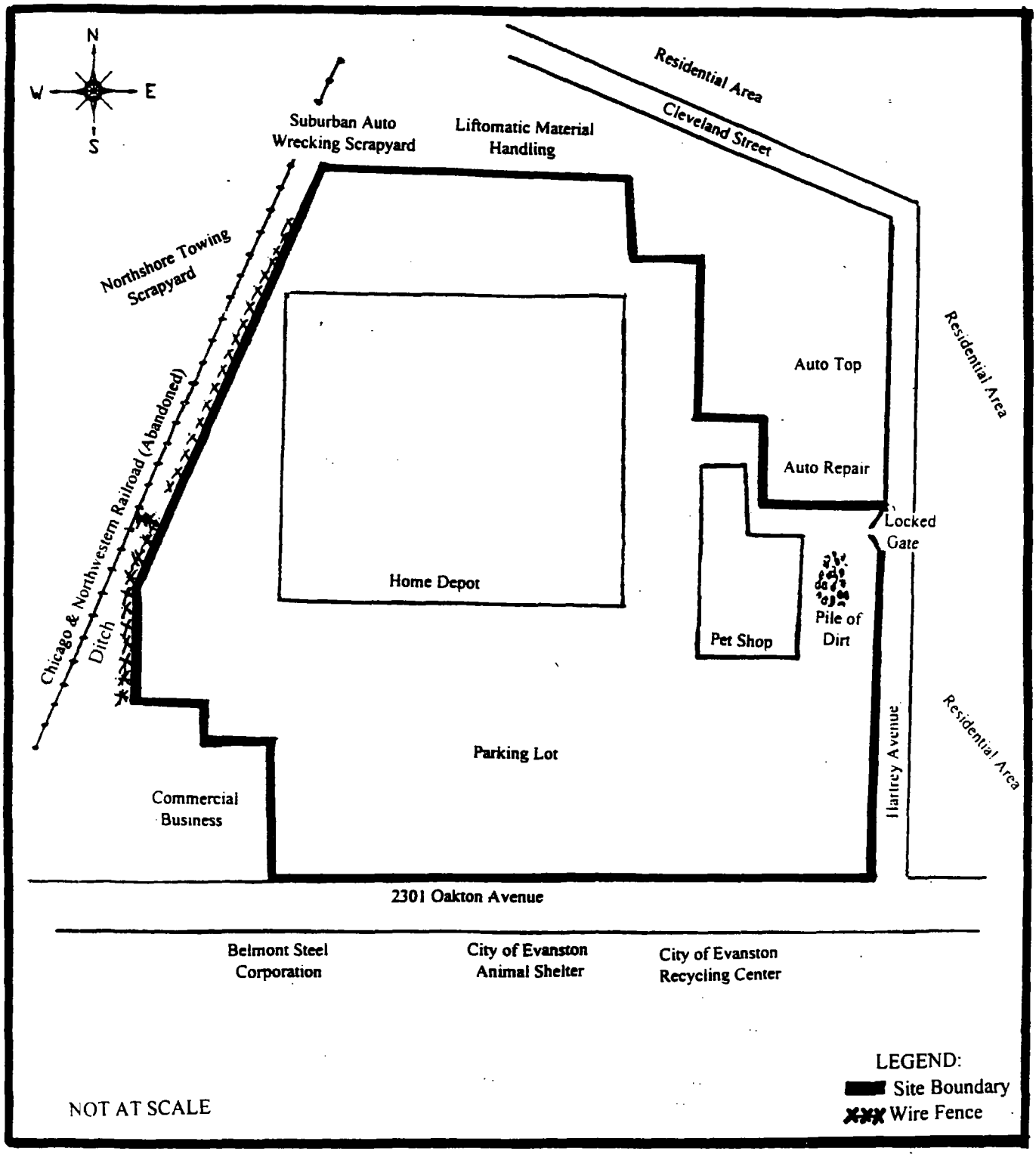
IDPH Toxicology Section 8/98

Former Rustoleum Property
SITE AND CENSUS



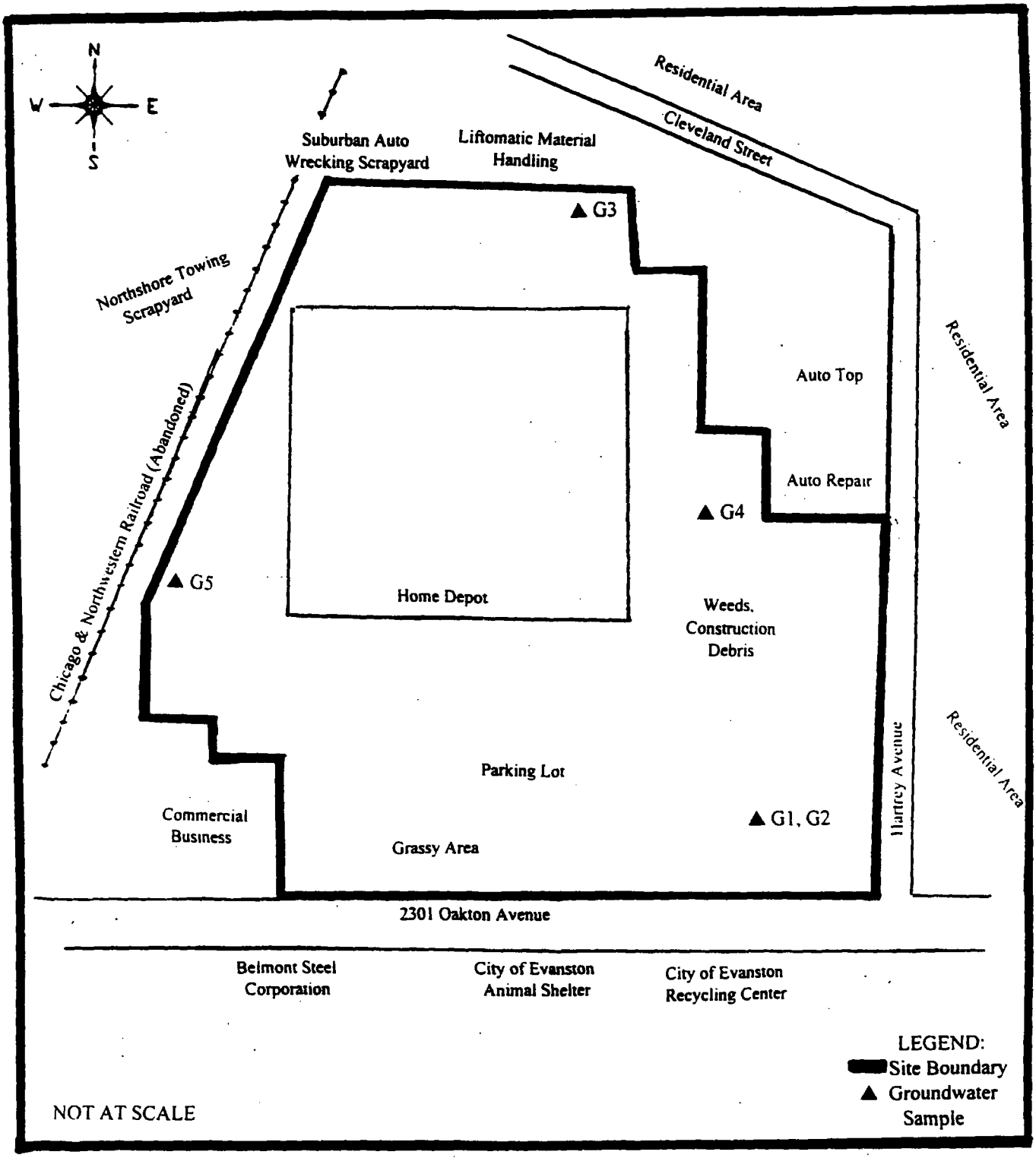
HOME DEPOT (FORMER RUSTOLEUM FACILITY)

IEPA SITE VISIT OF FEBRUARY 5, 1997



HOME DEPOT (FORMER RUSTOLEUM FACILITY)

IDPH SITE VISIT OF AUGUST 7, 1998



HOME DEPOT (FORMER RUSTOLEUM FACILITY)

GROUNDWATER SAMPLES LOCATIONS COLLECTED APRIL 15-16 , 1997

ATTACHMENT 8

Comparison Values Used In Screening Contaminants For Further Evaluation

Environmental Media Evaluation Guides (EMEGs) are developed for chemicals based on their toxicity, frequency of occurrence at National Priority List (NPL) sites, and potential for human exposure. They are derived to protect the most sensitive populations and are not action levels, but rather comparison values. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Reference Dose Media Evaluation Guides (RMEGs) are another type of comparison value derived to protect the most sensitive populations. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Cancer Risk Evaluation Guides (CREGs) are estimated contaminant concentrations based on a probability of one excess cancer in a million persons exposed to a chemical over a lifetime. These are also very conservative values designed to protect sensitive members of the population.

Maximum Contaminant Levels (MCLs) have been established by USEPA for public water supplies to reduce the chances of adverse health effects from contaminated drinking water. These standards are well below levels for which health effects have been observed and take into account the financial feasibility of achieving specific contaminant levels. These are enforceable limits that public water supplies must meet.

Lifetime Health Advisories for drinking water (LTHAs) have been established by USEPA for drinking water and are the concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects over a lifetime of exposure. These are conservative values that incorporate a margin of safety.